

## **Meeting on Mangrove ecology, functioning and Management (MMM3): more than two decades of insight on mangrove research in Kenya, Sri Lanka and beyond**

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### **Abstract**

The conference **MMM3**: International Meeting on Mangrove ecology, functioning and Management is jointly organized by the Vrije Universiteit Brussel (VUB), the Université Libre de Bruxelles (ULB), the University of Ruhuna (UoR) and the Kenya Marine and Fisheries Research Institute (KMFRI), and organized by the authors, in the premises of the University of Ruhuna in Galle, Sri Lanka (2-6 July 2012).

After a first edition in 2000 in Mombasa, Kenya (MMM1) and a second edition in Coolangatta, Australia in 2006 (MMM2), this third edition continues what has now become the first and only recurrent international conference on mangrove ecosystems in the world. It is organized every 6 years by mangrove scientists and offers plenty of time for interaction during and in between the single sessions composed of keynote addresses, oral presentations, oral pitching research highlights, junior and senior researcher and mangrove manager debates, poster sessions and excursions. The topics covered range from macrobenthos (incl. plant-animal interactions) which was the historical emphasis of the MMM Conferences, over plant, vegetation and systems ecology, and nutrient cycling, biogeochemistry and other environmental drivers, to carbon sequestration, stocks and payments for ecological services, climate change and people-ecosystem interactions, conservation and of course management. These issues will be further discussed during the mid-week MMM3 Workshop (9-13 July 2012) in the Pambala-Chilaw Lagoon complex (Sri Lanka) at the premises of the Small Fishers Federation of Lanka in Pambala-Kakkapalliya, with the objective of identifying research gaps through joint-fieldwork, analyses and brainstorming.

As the organizers of MMM3 we have the privilege to work with some of the finest mangroves scientists in the world, many of whom are participating in MMM3, and to contribute to the understanding of mangrove ecosystems in Mexico, Jamaica, the French Antilles, Surinam, Brazil, Mauritania, Gambia, Cameroon, Mozambique, Tanzania, Kenya, India, Sri Lanka, Malaysia, Vietnam, China and Australia. Though the MMM conferences are moments in time, in fact they reflect a continuous process of collaborating network nodes. However, most of the authors' work was carried out in Kenya and Sri Lanka with the institutional collaboration reflected by the present authorship and leading to >150 peer-reviewed papers.

Research topics covered in Kenya in general, and in Gazi Bay, in particular - the latter probably one of the most intensively studied mangrove sites in the world,- are focused on plant and animal assemblages and on restoration ecology (incl. aspect of carbon

sequestration). However, a wide range of papers are available ranging from physiology to hydrodynamics and from socio-ecology to animal behaviour. In Sri Lanka mangrove research has focused on plant science, vegetation dynamics and biogeochemical cycles. Overarching issues which have been at the focus of the authors' interest in all research sites were technical and methodological on the one side (such as remote sensing strategies) or societal (such as livelihood, dependence of local communities) on the other side.

This organizer presentation makes an attempt at summarizing research results from more than 2 decades (roughly from 1990 onwards) in order to show which is the current state of understanding in the functioning of mangroves, and in order to identify knowledge gaps. This is particularly important in the light of the global degradation of mangroves under increasing anthropogenic pressure and climate change impacts.

**Keywords**

MMM3, restoration ecology, physiology, hydrodynamics, socio-ecology, animal behaviour